of the metal did not perceptibly decrease. The iron content of the slag, however, considerably increased.

One sees that carbon exercises its reducing power up to what may be regarded as its complete elimination from the iron, and that it is the most powerful of all the reducing agents present, wrhilst phosphorus itself, in amounts of 0*7 per cent., is not able to hinder an increased oxidation of iron, which is apparent in the rise of the Fe content of the slag.

The. preceding example shows further (equally with charge 8-16 in the large furnace) how slowly the elimination of large amounts of reducing agents results from the oxidising action of the furnace, alonu. In order to remove 0"7 per cent, of P, two hours' furnace working were necessary.

The oxidising action of the flame is, on the one hand, the cause, that one must add reducing agents to the charge; on the other hand, however, the slowness with which the furnace action removes an excess of these reducing agents is a ground for the adaptation of the composition of the charge exactly to the oxidising action of the furnace gases, if one wishes to avoid loss of time, and to obtain the largest output from a given plant. For a long time, therefore, a pride was taken in fixing the charges accordingly to take the most direct possible course.